

Virtual Luxury in the Metaverse: NFT-Enabled Value Recreation in Luxury Brands

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Paper published in International Journal of Research in Marketing, 2024

<https://doi.org/10.1016/j.ijresmar.2024.01.002>

Abstract

With the emergence and popularity of non-fungible tokens (NFTs), the luxury brand industry has experienced an increase in their use of NFTs. This study employs multiple-case studies, thematic analysis method, and grounded theory to analyze 40 luxury NFT campaigns from 2021 and 2022. The analysis applies a sociotechnical perspective, integrating the technical factors of NFTs and the social factors of luxury value. The study identifies the values, attributes, and strategies of NFT-based virtual luxury. Based on the findings, this study introduces the concept and definition of virtual luxury to understand and advance luxury brands in the Metaverse. This study theoretically contributes to the luxury industry by envisioning a virtual transformation of luxury brands.

Keywords: Non-fungible tokens, luxury brands, luxury values, virtual luxury, the Metaverse, digital marketing

1. Introduction

The Metaverse is a future version of the Internet. It blends the physical and virtual worlds, creating an extended reality, where individuals can interact with each other in an immersive digital space (Giang Barrera & Shah, 2023). The Metaverse supports social interactions, developable relationships, and transferable economic values (Dwivedi et al., 2022). It offers new opportunities for consumption and, accordingly, for value recreation. Recently, a trending way to create innovations in the Metaverse is using non-fungible tokens (NFTs), a type of non-interchangeable

data written on a blockchain (Belk et al., 2022). NFTs can take many forms, such as avatars, virtual wearables, and rare digital collections. They allow digital possessions or assets to have digital scarcity and certify their authenticity, authorship, and ownership (Belk et al., 2022; Chohan & Paschen, 2021; Sestino et al., 2022), as every NFT is unique and cannot be copied, enabled by its technical feature of non-fungibility (Chohan & Paschen, 2021). Not surprisingly, NFTs have gained significant attention in the luxury industry (Joy et al., 2022), which highly values product uniqueness, unattainability, and exclusivity (Kapferer, 2015). Luxury brands have launched different NFT marketing campaigns since late 2020 (Alexander & Bellandi, 2022; Joy et al., 2022).

The NFT literature suggests that NFT-backed innovations possess unique identities and statuses (Belk et al., 2022), with higher transaction and interaction efficacy (Alexander & Bellandi, 2022). NFTs mostly appear virtually (e.g., the NFT watches launched by the Swiss watchmaker [Louis Moinet](#) in 3D artwork), but they can be connected to physical products as well, enhancing consumers' overall brand attitudes (Xie et al., 2023) and real-life purchase intentions (Sung et al., 2023). For instance, Dolce & Gabbana's NFT collection [Collezione Genesi](#) provided products with both virtual and physical versions. Consumers can wear the physical version in real life and use the virtual version in the Metaverse to dress their avatars. Consumers perceive NFT-backed luxury products, even when lacking a physical embodiment, to be associated with uniqueness, prestige, and authenticity, potentially reshaping value recreation in luxury marketing (Alexander & Bellandi, 2022). As such, NFTs can potentially enable a virtual transformation for luxury brands, sustaining their development in the Metaverse (Alexander & Bellandi, 2022; Joy et al., 2022).

Therefore, beyond exploring the influence of NFTs on improving current marketing approaches or assisting in off-line sales (e.g., Chohan & Paschen, 2021; Colicev, 2022), we posit that NFTs have the potential to transform luxury brands into a virtual form, characterized by digital

scarcity. This proposition is supported by the previous concept of digital virtual consumption, which envisions a kind of business that is primarily based on digital virtual products, for instance, for in-game purchases (Denegri-Knott & Molesworth, 2010; Jung & Pawlowski, 2014). Although virtual products do not exist materially, they impact consumers' self-perception and social norms (Eastwick & Gardner, 2009), having real-world significance to consumers (Brey, 2003). Moreover, virtual products are unconstrained by material limitations and temporospatial boundaries. They can be tailored to fit virtual contexts and meet the emerging needs of virtual individuals and social interactions in the virtual realm. However, all luxury forms have previously been grounded in physical products, limiting the forecasting of their virtual futures. Thus, this study aims to examine how NFTs might recreate luxury value and give rise to a new category of luxury: 'virtual luxury'. It addresses three questions: What is the value of NFT-enabled luxury? What does this emergent luxury value mean for luxury brands? How does this give rise to a new category of luxury?

For these purposes, this study builds upon the theory of luxury brands and luxury value. It adopts a sociotechnical perspective as a framework, supported by the existing literature on the social factors of luxury value and the technical facets of NFTs. Furthermore, the study analyzes 40 luxury NFT campaigns using multiple-case studies, a thematic analysis approach, and grounded theory. The results contribute to the understanding and definition of virtual luxury and its value to luxury brands.

2. Theoretical background

2.1. Evolutions of luxury brands and their value

Defining luxury brands is an ongoing endeavor (Rathi et al., 2022). Two streams of literature focus on defining luxury brands. One aims to identify the fundamental and unchanging features of luxury brands (e.g., Wang, 2022), while the other seeks to reflect the luxury brand features and

value propositions (e.g., Vigneron & Johnson, 2004; Wiedmann et al., 2007). As indicated in latter studies, luxury brands are malleable and evolving because their value depends on the beliefs and judgments of consumers (Hart, 1971) and the attributes and marketing consequences of brands (Woodruff, 1997). Their value shifts depending on social (Quach & Thaichon, 2017) and technological contexts (Chandon et al., 2016; Okonkwo, 2009). Thus, defining luxury brands requires continual efforts to reflect contextual luxury landscapes and shifting market demand. This study identifies four evolutions that luxury brands have undergone (Table 1).

The original form of luxury is exclusive luxury, which emerged in ancient times. Exclusive luxury comprises possessions and codes of the upper class, characterized by sophisticated techniques, precious materials, rare resources, and advanced innovations (Okonkwo, 2009). The costliness and exclusivity of luxury distinguishes the elite class from the mass class (Berry & Cela, 1994), serving as a costly status signal (Bliege Bird & Smith, 2005) and playing a significant role in social stratification (Berry & Cela, 1994).

The second form of luxury is accessible luxury. In the nineteenth and twentieth centuries, the upheaval of social classes and the rise of social mobility on a global scale increased the demand for luxury products. In response, the luxury industry expanded its product lines, locations, and production volumes to meet growing demand (Csaba, 2008; Nueno & Quelch, 1998). Under these circumstances, luxury transformed from exclusive to accessible, acquiring richer meaning and broader value for various types of consumers according to their income level and need for brand prominence (Han et al., 2010). The accessible luxury also features rising value within the mass class (Granot et al., 2013; Silverstein & Fiske, 2003; Wang et al., 2022).

Recently, the increasing significance of experiential value, such as hedonism and escapism, has led to experiential luxury, which again expanded the scope of luxury brands and gained

attention for its conceptualization (Banister et al., 2020; Malone et al., 2023; Thomsen et al., 2020). Remarkably, luxury brands today have been undergoing a virtual transformation in response to the Metaverse (Joy et al., 2022). While this trend has briefly been discussed in recent literature (Joy et al., 2022; Leban et al., 2020) for exploring specific technologies (e.g., Baek et al., 2022), the concept of virtual luxury as a new paradigm has remained primarily undocumented, and luxury value in this context has yet to be clearly defined.

Table 1

Evolution of Luxury Types

Luxury Type	Societal Background	Targets	Main Features	Value Highlights	Study Examples
Exclusive luxury	Hierarchical society	Upper class	Uniqueness, exclusivity, (in)conspicuousness, hedonism, and extended self	Signaling status and wealth to their peers	(Han et al., 2010; Kapferer, 2012; Okonkwo, 2007; Vigneron & Johnson, 2004)
Accessible luxury	Democratization and globalization	New aspirational class, nouveau rich, millennials, global consumers	Price-based accessibility	Signaling status, success, changing social standing, and achievements for self-presentation; Hedonism; Impression management	(Atkinson & Kang, 2021; Kapferer & Laurent, 2016; Rosendo-Rios & Shukla, 2023; Silverstein & Fiske, 2003; Wang et al., 2022)
Experiential luxury	Expanding social networks, increasing social mobility, and raising individual power in digitalization	Millennials, Gen Z, net generation	Escaping luxury, momentary luxury, consumer-constructive luxury	Constructing new experiences and projecting self and identity	(Atkinson & Kang, 2021; Kapferer & Laurent, 2016; Llamas & Thomsen, 2016; Rosendo-Rios & Shukla, 2023; Wang et al., 2022)
Virtual luxury	The Metaverse	Virtualized agents	Virtual products, experiences, services, assets,	To be defined	(Alexander & Bellandi, 2022; Javornik et al., 2021; Joy et al., 2022;

			and environments		Jung et al., 2021; Schauman et al., 2023)
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2.2. Sociotechnical perspective

A sociotechnical perspective is an approach to interpreting interrelationships between technological and social aspects (Bostrom & Heinen, 1977). Technological aspects refer to the processes, tasks, or technological features shaped by new technology, whereas social aspects are related to human attributes, such as expectations, values, and attitudes (Bostrom & Heinen, 1977). In technical transformations, when a system is refined using emergent technologies, the elements and linkages of social aspects can be reproduced (Geels, 2005). This study adopts this approach to investigate the technical factors of NFTs and the social factors of luxury values to understand NFT-based value recreation in luxury brands.

2.2.1. Technical factors of NFTs

A token is a digital asset secured using cryptography on a blockchain network (Peres et al., 2022). An NFT is a unique token type that cannot be exchanged on a one-to-one basis with another, highlighting its uniqueness and indivisibility (Sestino et al., 2022). Typically, an NFT can be attached to a file or digital information in any format, enabling various objects in NFT formats, such as avatars, collections, art, fashion, certificates, digital access, community identity, and the like (Belk et al., 2022; Sestino et al., 2022). The technical factors of NFTs are derived from the underlying blockchain infrastructure and the NFTs themselves.

A blockchain is a distributed database operated across multiple sites, systems, or locations, maintained by a peer-to-peer network rather than a central authority, using advanced encryption for security (Seebacher & Schüritz, 2017). The blockchain, which is operated through a collective network (called decentralization), can ensure that recorded data are transparent and unchangeable.

As a significant component of the blockchain, smart contracts automatically enforce and execute agreements, eliminating the need for intermediaries (Wilson et al., 2022).

An NFT is distinct from other blockchain innovations due to its scarcity and versatility, stemming from its unique nature and ability to be linked to digital files (Hartwich et al., 2023). Moreover, based on these technical features, the business value of NFTs is achieved by strategizing the dynamics of tokenomics (Freni et al., 2022). The term *tokenomics* (a combination of *token* and *economics*) refers to economic rules governed by tokens in token-based projects. In a decentralized system without third-party intermediaries (e.g., brokers and agents), tokenomics establishes key mechanisms and drives self-governance in a project (Freni et al., 2022), shaping the interrelationships and behaviors of entities in the system (Cong et al., 2022).

The tokenomics of NFTs comprises three significant parts: design, issuance, and ecosystem functioning (Bao & Roubaud, 2022; Hartwich et al., 2023). *Design* refers to the design of the reference object, token properties, and primary functions of an NFT (Hartwich et al., 2023). It determines the type, properties, and visual appearance. *Issuance* signifies the supply strategy, including issue quantity, price, timeframe, and purchase rules, which set the dynamics of economic behavior by adjusting supply and demand (Freni et al., 2022). *Ecosystem functioning* indicates the rights, benefits, incentives, or permits encompassed in NFTs, promoting incentivized user behaviors (Alkhudary et al., 2022; Freni et al., 2022; Hartwich et al., 2023).

2.2.2. Social factors of luxury values

Smith and Colgate (2007) proposed a value-creation framework capturing value aspects through strategic orientation. This framework categorizes consumer values into four categories: symbolic/expressive, experiential/hedonic, functional/instrumental, and cost/sacrifice, which facilitates describing value-creation strategies and enhancing product value specifications (Smith

& Colgate, 2007). Within the scope of this framework, luxury brands are identified with the following value characteristics and strategies.

Symbolic and expressive values represent psychological meaning associated with brands for oneself and others (Smith & Colgate, 2007). Luxury brands can be used to project self-related goals or concepts (e.g., self-projection and self-achievement; Dubois et al., 2001; Kastanakis & Balabanis, 2012) and signal social messages (e.g., status and distinction, Latter et al., 2010; Veblen, 2017). Symbolic and expressive values are created by constructing the senses of prestige, creative leadership, rarity, and exclusivity (Kapferer & Valette-Florence, 2018; Nichols, 2017).

Experiential and hedonic values pertain to the consequences of feelings, emotions, and experiences (Smith & Colgate, 2007). These values are conventionally created by store atmosphere (Dion & Borraz, 2015), aesthetic design (Joy et al., 2014), brand authenticity (Cheah et al., 2016), daily consumer practices (Banister et al., 2020), and social interactions (Athwal et al., 2018). Thus, consumers can experience hedonic feelings (Kumagai & Nagasawa, 2021), escapist pleasure (Thomsen et al., 2020), fulfillment (Atkinson & Kang, 2021), and happiness (Zhang et al., 2022) through luxury consumption.

Functional and instrumental values involve the functional aspects associated with brands (Smith & Colgate, 2007). Most luxury brands have utilitarian functions and are known for their premium quality (Jung Choo et al., 2012), which is demonstrated through craftsmanship, superior materials, thoughtful design, advanced technology, and sophistication. These elements collectively contribute to luxury brands' reliable performance (Vigneron & Johnson, 2004).

Cost and sacrifice values indicate economic or psychological transaction costs or gains associated with brands, such as price and investment (Smith & Colgate, 2007). Cost and sacrifice values have special significance for luxury brands. Unlike mass brands, where cost savings are

typically expected, luxury brands are intended to be costly signals of consumers' competence and wealth, setting social boundaries and minimizing imitation (Bliege Bird & Smith, 2005; Nelissen & Meijers, 2011). Additionally, other costs, such as wait time, qualification requirements, and specified distribution channels, make it difficult for luxury purchases to strengthen a brand's unattainability strategically (De Barnier et al., 2012; Kapferer & Bastien, 2012). In return, luxury brands hold resale and investment value due to their costliness.

Based on the above knowledge, this study explores how NFTs reinvent the value of traditional luxury brands (e.g., Gucci and Louis Vuitton) in the Metaverse by investigating luxury NFTs. Luxury brands are selected as subjects based on their distinct characteristics to define the scope of this research, following the recommendations by Ko et al. (2019). The target luxury NFT campaigns include any NFT product launched by traditional luxury brands, which could be in the format of NFTs (e.g., an NFT avatar) or products with NFT elements (e.g., a physical necklace displaying an NFT avatar).

3. Method

This study employs a dual approach (Mingers, 2001). The data were gathered using a multi-case study methodology (Yin, 2004) supplemented with the relevant literature (Urquhart et al., 2010). The study follows thematic analysis (Braun & Clarke, 2022) and grounded theory (Walker & Myrick, 2006) to conduct analysis and generate new theoretical insight (Belk & Sobh, 2019).

3.1. Case selection and data collection

Luxury brands began creating NFT campaigns in 2021 (Joy et al., 2022), coinciding with a surge in the NFT market (Chohan & Paschen, 2021). Thus, all luxury NFT campaigns from 2021 to 2022 were sampled to ensure a comprehensive understanding of luxury NFT campaigns.

According to the triangulation principle (Yin, 2004), data from more than three sources were collected and examined more than three times to enhance data validity.

Initially, the preliminary case selection, data collection, and analysis were conducted to develop a broad understanding of the scope by searching for the keywords “luxury brands,” “NFTs,” “Non-fungible tokens,” and “luxury NFTs” on Google (by reading the first 500 articles of the search results) and Twitter (by reading all relevant tweets). In the second round, a cross-reference snowballing method (Wohlin, 2014) was applied to gather all target cases, reviewing specialized NFT websites of luxury brands, Twitter, news websites, blogs, and others until all cases in the research scope were in the case list. Throughout the research period, we added newly launched cases to the list. This process ran from May 2021 to December 2022, resulting in 40 NFT campaigns from 27 luxury brands (Table 2).

Table 2

Luxury NFT Cases (Chronological Overview)¹

No.	Launch Month	Brand Name	Category	NFT Name	Platforms	NFT Types
1	May-21	Gucci	Fashion	Gucci Garden	Metaverse platform: Roblox	Metaverse, Metaverse wearables, artworks, avatars
2	Aug-21	Louis Vuitton	Fashion	Louis The Game	The brand’s mobile application	Avatar, in-game self/accessories
3	Aug-21	Burberry	Fashion	Sharky B	Game and NFT marketplace: Blankos	In-game character and accessories

¹The “launch month” indicates when brands officially announced the NFT campaigns for the first time; one NFT may belong to more than one NFT type due to its diverse characteristics.

4	Aug-21	Porsche	Car	Tradition & Vision	The brand's NFT website	Art
5	Aug-21	Dolce & Gabbana	Fashion	Collezione Genesi	NFT marketplace: UNXD	Digital twin
6	Sep-21	KARL LAGER FELD	Fashion	KARL IKONIK and KARL CHROMATIK	The brand's NFT website	Avatars, collectibles
7	Oct-21	Jimmy Choo	Heels	Eric Haze Chasing Stars	NFT marketplace: Binance NFT	Digital twin
8	Oct-21	Jimmy Choo	Heels	Jimmy Choo Mystery Box	NFT marketplace: Binance NFT	Collectibles
9	Oct-21	Bulgari	Jewelry	Serpenti Metamorphosis	Not publicly available	Art
10	Oct-21	Ray-Ban	Accessories	RAY-BAN x EXTRA WEG	NFT marketplace: OpenSea	Art
11	Nov-21	Givenchy	Fashion	CHITO X GIVENCHY NFT	The brand's NFT website	Avatars
12	Dec-21	MCM	Fashion	MCM'etaverse	The brand's NFT website	Metaverse
13	Dec-21	Coach	Leather goods	Coach Holiday Animals	The brand's mobile application	Collectibles
14	Dec-21	Faith Connexion	Fashion	Faith Tribe	The brand's NFT website	Ownership-based authentication
15	Dec-21	KARL LAGER FELD	Fashion	KL7 X ENDLESS	The brand's NFT website	Avatars, collectibles
16	Jan-22	Balmain	Fashion	Balmain x Barbie	Collector platform: Mattel Creations	Avatar, digital twin
17	Jan-22	Patrón	Spirits	PATRÓN en LALIQUE: Serie 3	NFT marketplace for spirits: BlockBar	Collectibles, ownership-based authentication
18	Feb-22	Gucci	Fashion	SUPERGUCCI	The brand's NFT website	Art

19	Mar-22	Bulgari	Watches	Octo Finissimo Ultra	The brand's NFT website	Ownership-based Authentication
20	Mar-22	Jacob & Co.	Watches	Astronomia Metaverso Collection	NFT marketplace: UNXD	Digital twin, community membership/gating
21	May-22	Hublot	Watches	Hublot x Takashi Murakami NFTs	The brand's authentication application	Ownership-based authentication, collectibles
22	May-22	Gucci	Fashion	Gucci Town	Metaverse platform: Roblox	Metaverse, Metaverse wearables
23	Jun-22	Gucci	Fashion	10KTF Gucci Grail	The brand's NFT website	PFP (i.e., Profile Picture)
24	Jun-22	Prada	Fashion	Prada Timecapsule	NFT marketplace: OpenSea	Collectibles, digital twin
25	Jun-22	Burberry	Fashion	Minny B	Game and NFT marketplace: Blankos	In-game character and accessories
26	Jun-22	Salvatore Ferragamo	Shoes & Leather goods	NFT Installation	NFT marketplace: OpenSea	Art
27	Jun-22	Tag Heuer	Watches	Calibre E4 smartwatch	Displaying NFTs on watches	NFT display
28	Jul-22	Gucci	Fashion	Gucci Vault Art Space	The brand's NFT website	Art
29	Aug-22	Tiffany	Jewelry	NFTiff	Creating NFTs into pendants	NFT display
30	Aug-22	Coach	Leather goods	Coach x Shxpir NFT	NFT marketplace: OpenSea	Collectibles
31	Sep-22	Balenciaga	Fashion	To the Moon NFT	NFT marketplace: crypto.com	Collectibles
32	Sep-22	Dolce & Gabbana	Fashion	Dolce & Gabbana Disco Drip	Metaverse platform: Decentraland; NFT marketplace: UNXD	Metaverse wearables

33	Sep-22	Oriental ist Spirits	Spirits	The Founders Collective	NFT marketplace: OpenSea	Community membership/gating, digital twin
34	Oct-22	Gucci	Fashion	Gucci Vault Land	Metaverse platform: Sandbox	Metaverse, Metaverse wearables
35	Oct-22	Balmain	Fashion	The Balmain Thread	NFT marketplace: MintNFT	Community membership/gating
36	Oct-22	HUGO	Fashion	Embrace Your Emotions	NFT marketplace: OpenSea	Collectibles, digital twin, avatar
37	Nov-22	Dewar's	Spirits	Dewar's Double Double 21-Year-Old Rye Cask Finish	NFT marketplace: BlockBar	Ownership-based authentication, collectibles
38	Dec-22	Hennessy	Spirits	Cafe 11 NFT	The brand's NFT website	Community membership/gating
39	Dec-22	Johnnie Walker	Spirits	Johnnie Walker Masters of Flavour	NFT marketplace: BlockBar	Ownership-based authentication, digital twin, collectibles
40	Dec-22	Porsche	Car	911	The brand's NFT website	Collectibles

3.2. Analysis framework

An analysis framework was developed with an open coding process. The coding initially focused on the characteristics and classifications of all NFT products. This research assessed (1) blockchain features proposed by Seebacher and Schüritz (2017), (2) NFT features, and (3) token taxonomies advocated by Freni et al. (2022), Hartwich et al. (2023), and Wang et al. (2021). Second, critical elements of luxury values (Jung Choo et al., 2012; Smith & Colgate, 2007) and integrated dimensions crucial for analyzing luxury marketing were considered. For luxury value factors, strict subdimensions were not applied to avoid constraining the understanding of past

knowledge. Instead, subdimensions were added and discovered during the analysis, leading to the analytical framework depicted in Figure 1.

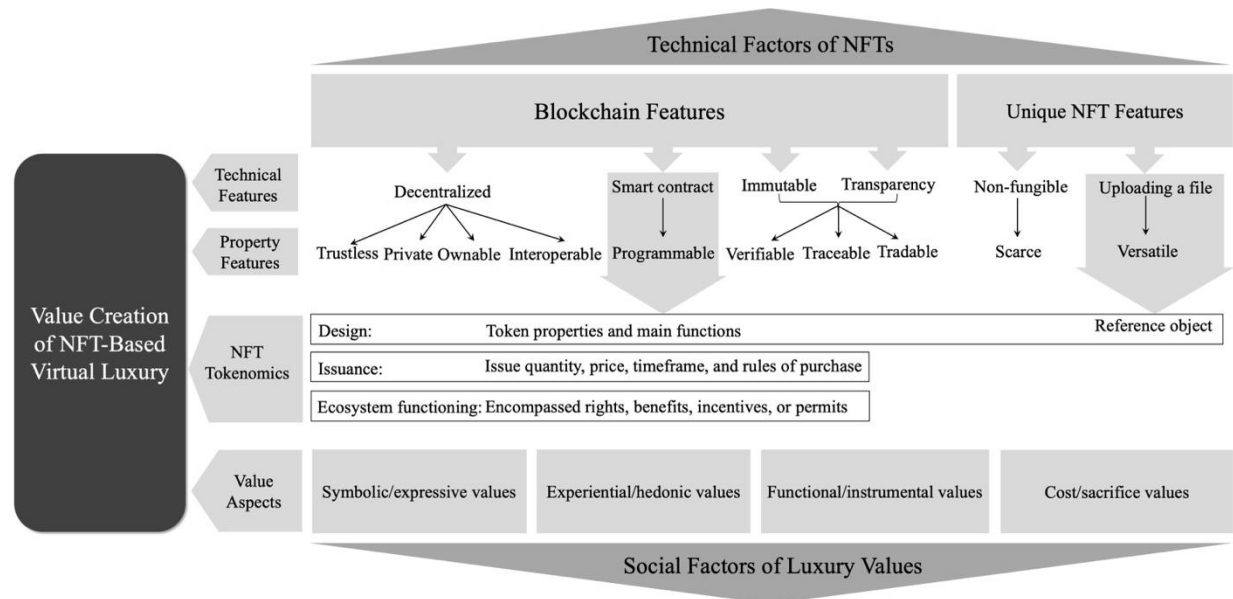


Figure 1. Analysis framework.

3.3. Data coding and analysis

First, the cases were organized chronologically to identify trends in NFT types and examine how NFTs developed for luxury products. Two researchers independently coded the data for all NFT cases, and the data were discussed and merged. Second, an experienced researcher conducted the analysis, aiming to uncover the general value-creation strategies used in luxury NFTs using a four-step approach. First, the researcher conducted deductive content analysis to identify the embodiments of luxury values in NFTs. Second, the researcher identified within- and cross-case patterns. Third, the researcher interpreted the analysis based on the data and literature and conceptualized the characteristics of NFT-based virtual luxury. Fourth, several iterations were made between the data and the emerging theory. Consequently, the evidence and detailed explanations generated a concept of virtual luxury with the associated values.

4. Findings

The most popular types of luxury NFTs in our cases were collectibles, community membership/gating, digital twins, ownership authentication, avatars/profile pictures, art, in-game accessories, Metaverse playgrounds, Metaverse wearables, and NFT display accessories, which summarizes the current extent and range of luxury NFT categories. Furthermore, six themes emerged in the analysis of the luxury value of NFT-based virtual luxury products: *expressions for virtual selves, distinctions in virtual interactions, experiences in virtual space, facilitation for virtual interfaces, visually driven excellence, and economic benefits of virtual assets*. Table 3 provides an overview of these themes.

Table 3

Value Strategies of NFT-Based Virtual Luxury

Virtual Luxury			
Value Aspects	Subdimensions	Rationale	Examples
Expressions for virtual selves	Uniqueness of virtual selves	Providing unique possessions, ownable virtual bodies/images, wearables, and accessories for virtual agents to express their dissimilarity and outstanding identity in the Metaverse	<ul style="list-style-type: none"> • One-of-a-kind collectibles • Customized avatars • Rare virtual wearables
Distinctions in virtual interactions	Conspicuousness in virtual contexts	Creating perceptions of conspicuousness in virtual contexts through exorbitant prices and symbolic branded elements or attributes for virtual products	<ul style="list-style-type: none"> • Virtual avatars and PFPs are designed with branded elements • Virtual products are sold at exorbitant prices
	Prestige in virtual communities	Designing community settings with gates, rules, levels, norms, culture, and pride to give members a sense of prestige	<ul style="list-style-type: none"> • Exclusive assets to a community • Distinguishable roles in a community

Experiences in virtual space	Playfulness	Incorporating shopping/branding activities into playful scenarios	<ul style="list-style-type: none"> • Game • Metaverse playground
	Aesthetics	Designing aesthetic appearance to enhance pleasure	<ul style="list-style-type: none"> • Collaboration with renowned artists • Creative digital art
Facilitation for virtual interfaces	Liquidity	Can be easily traded, transacted, and interacted with in virtual space with virtual interfaces	<ul style="list-style-type: none"> • Trade the ownership of a bottle of whiskey within seconds without the need to trade the physical counterpart
	Perpetuity	Can timelessly exist on a blockchain	<ul style="list-style-type: none"> • Eternal usage and ownership
	Authentication capability	Can be easily verified for authenticity	<ul style="list-style-type: none"> • All historical transactions can be publicly traced and automatically verified by bots
	Interoperability	Can be used to interact with other virtual interfaces and platforms	<ul style="list-style-type: none"> • One product can be used in online communities, games, social media, events, future sales, and online transactions
Virtually assessed product quality	Visually driven excellence	Signaling product excellence for invisible functions through visual design	<ul style="list-style-type: none"> • Bonding products with a well-designed image
Economic benefits of virtual assets	Investment	Integrating products with investment usages via virtual assets or cryptocurrencies	<ul style="list-style-type: none"> • Future appreciation in price fluctuations
	Costliness	Making rare items costly	<ul style="list-style-type: none"> • Skyrocketed auction prices

	Future benefits	Providing possible additional economic gains in the future	<ul style="list-style-type: none"> • Rights to access airdrops, rewards, or discounts
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4.1. Expressions for virtual selves

Uniqueness of virtual selves. Uniqueness indicates the distinction of a product compared to other products (Tian et al., 2001). Consumers seek uniqueness in a product to develop a distinctive self (Tian et al., 2001) and display it to express their individuality (McGuire, 1976). Our cases indicate that virtual luxury creates value for virtual agents by providing unique possessions (e.g., collectibles), ownable virtual bodies or images (e.g., avatars), wearables (e.g., virtual outfits), and accessories (e.g., virtual bags) that individuals can use to express and present themselves in extended reality.

The uniqueness of NFT-based products stems from the technical scarcity of NFTs, further augmented by artificial scarcity achieved by astute marketing (e.g., supply-based, demand-based, and time-based; Barton et al., 2022), contributing to the overall value proposition and appeal. Our cases reveal that NFT products are designed to be dissimilar with rare traits in a collection using such strategies as (1) one-of-one (i.e., only one trait and one corresponding NFT exist), (2) one-of-a-kind (i.e., multiple traits exist but in one kind; each NFT is unique with distinct traits), (3) tiers (i.e., many tiers of NFTs exist with different traits), and (4) customization (i.e., the uniqueness of an NFT is achieved through customization). These traits are usually human-readable (e.g., colors, faces, and bodies), allowing users to capture their differences easily (Mekacher, 2022). For instance, Jimmy Choo's Eric Haze Chasing Stars has only one pair of digital heels available in the market, making it one-of-one. Porsche's 911 collection consists of 7,500 items, with each NFT distinguished by its variants, such as color, to be one-of-a-kind. KARL LAGERFELD's NFT collection KL7 X ENDLESS has four tiers of NFTs. Each tier includes many identical items, but

different tiers are sold with varying prices, quantities, colors, and associated rights. Tiffany's NFTiff is representative of customization, where each NFT is tailored based on consumers' own unique profile picture.

Furthermore, in supply strategies, quantity and price are two vital factors affecting supply and demand. Luxury NFTs can have various tiers within a collection; a higher tier indicates a rarer (i.e., with a higher price and lower quantity) NFT. Additionally, regarding attainability, the purchasing process for luxury NFTs is intentionally challenging for consumers. In our cases, consumers are commonly asked to complete required tasks, act within a specific period, or possess a particular identity or pass. In luxury marketing, this attainability strategy has long been recognized as an effective method to construct superiority and consumer pride by generating social segregation (Kapferer, 1997; Sung & Phau, 2019). Compared with traditional means, the difference lies in the attainability rules for luxury NFT sales, which are fully digital, with significant importance placed on social media and communities.

4.2. Distinctions in virtual interactions

Conspicuousness in virtual contexts. Conspicuousness refers to a product's ability to draw attention through symbolic branded elements or attributes (Page, 1992). The cases demonstrate that virtual luxury products are made conspicuous through exorbitant prices (which can be viewed on public NFT marketplaces, such as OpenSea) and branded visuals. To maintain brand prominence and symbolic familiarity, the visual design of most virtual luxury products draws inspiration from the brand's classic products or iconic designs. These brand elements tend to arouse the knowledge of brand symbolism in virtual contexts, transcending various scenarios. For instance, the character Vivienne in the case of Louis the Game is outfitted with garments inspired by Louis Vuitton's monogram print and floral patterns with conspicuous brand prominence.

Prestige in virtual communities. Prestige is an attribute of a person's social position or standing in a social system (Wegener, 1992) and is associated with status-seeking in the context of luxury brands (Vigneron & Johnson, 1999), such as using such products to signify high social standing to gain social benefits (Heine et al., 2016). The analyses indicate that virtual luxury constructs consumer prestige by narrating the heritage, norms, and leadership of luxury brands. Virtual communities play a significant role in defining the meaning of the culture and norms of a brand by gathering consumers together for repeated interactions, awareness of others, and following rituals. In addition, luxury NFTs assist communities by gating memberships and top-down rules through smart contracts. Among luxury NFTs, it is popular to offer associated usages, such as access to a community event and future NFT drops. These strategies create prestige by setting boundaries of inclusion and exclusion for consumers. Luxury brands can further regard these functionalities as socioeconomic tools to trigger consumer actions in their ecosystem (Freni et al., 2022). For example, individuals seeking entry to the Gucci Vault community must verify their NFT status using bots. After entering, different collectible holders are differentiated into sections of the community member list.

4.3. Experiences in virtual space

Playfulness. Playfulness refers to joyful and imaginative human-computer interactions in a game-like reality (Webster & Martocchio, 1992) and is associated with consumer enjoyment, escapism, and a flow state (Mathwick et al., 2001; Woszczynski et al., 2002). In virtual reality, the sense of telepresence, body ownership, and control capabilities contribute to consumers' experience of playfulness, leading to positive behavioral intentions, such as using, visiting, and purchasing (Han et al., 2010). The cases revealed that virtual luxury tends to incorporate shopping and branding activities into playful scenarios, often in the form of games or virtual land. In these

virtual environments, consumers engage in immersive interactions, participate in play-to-earn activities, and acquire brand information. By being playful, luxury brands captivate consumers through unconscious learning and co-creation experiences, strengthening their brand identity in consumers' minds while selling products (Roggeveen et al., 2021).

Aesthetics. A virtual world is primarily a visual world in which visualization and art play crucial roles (Far et al., 2023; Zhao et al., 2022). Thus, aesthetics significantly influence the Metaverse experience (Hwang & Koo, 2023). In all cases, it was considered essential to create a pleasurable virtual luxury experience visually. Luxury NFTs were coupled with visual images, emphasizing the importance of aesthetically appealing virtual goods. Most of these images are in digital art styles, including computer art and three-dimensional animation. Conventionally, art signals a luxury product's rarity, authenticity, and leadership (e.g., Chailan, 2018; Dion & Arnould, 2011). Artist collaboration is a prevalent strategy for strengthening these perceptions and enhancing consumer pleasure in luxury brand marketing (Chailan, 2018). In the cases, it is common for luxury NFTs to associate with renowned artists and feature their names. Some are the brands' in-house artists or directors who express the brands' art commitment, whereas others are collaborative digital artists who signal the NFTs' digital leadership.

4.4. Facilitation for virtual interfaces

Virtual luxuries are often closely related to a brand's primary or latest product features. They demonstrate the continuity of brands in the digital space. For example, Gucci sells virtual bags, Ray-Ban sells virtual sunglasses, and Jimmy Choo sells virtual heels. The most significant functional distinction between virtual and physical luxury products is that they are virtually embodied. They are designed to integrate with technical interfaces in the Metaverse and incorporate digital creativity (e.g., augmented reality interaction). Therefore, these functional

innovations cater to consumers' pre-existing expectations of traditional luxury consumption while reinventing past utilitarian values with new attributes. They exhibit the following prominent functional values.

Liquidity. Traditionally, luxury products have been made with precious physical materials, and trading them online or delivering them to a distant place can create security concerns, waiting time, and logistics expenses. Trading NFTs on a decentralized blockchain is low-cost, borderless, efficient, and intermediary-free. While the purchase is complex due to the many rules that need to be followed, the technology facilitates transactions. As such, virtual luxury items can be traded easily (e.g., completing global trading in a few minutes) while maintaining their scarcity and authenticity online by associating with the corresponding attributes of NFTs. Valuable or fragile physical luxury products (e.g., spirits) can be mirrored and tokenized in the virtual world and traded without damaging the physical products. In both cases, NFTs enhance the liquidity of luxury products in the virtual world.

Perpetuity. Because the data stored on the blockchain are decentralized and immutable (Iansiti & Lakhani, 2017), luxury NFTs are not subject to central control or expiration. These features help realize luxury brands' timelessness claims (e.g., Kapferer & Bastien, 2012). They also enhance the sustainable value of luxury items and foster lifelong consumer relationships. In comparison, physical luxury products have limited lifespans due to physical deterioration. Although the Internet can create digital copies, centralized websites have the potential for website shutdowns or data deletion, resulting in transience.

Authentication capability. Owing to the non-fungibility of NFTs, when NFTs back products, each product can be presented online as unique with verifiable authenticity (Wang et al., 2021). The authentication function is prevalent among watch and spirit brands as an added value to their

physical products, facilitating the tracking of products throughout their lifecycles. Additionally, counterfeiting has been a critical problem for luxury brands that sell online (Ar, 2012). With the ability to check ownership, the ownership of luxury items can be valued more (vs. counterfeits) (Alexander & Bellandi, 2022; Sung et al., 2023).

Interoperability. A blockchain is a shared and decentralized data layer that enables cross-platform transactions and communications (Park et al., 2022a). In addition, luxury NFTs are advanced tools that help virtual individuals or virtual assets interact with various interfaces in the virtual world, including in online communities, games, social media, events, future sales, and online transactions. Physical assets can seamlessly interact with virtual interfaces through digital twins. This interoperability of virtual luxury enhances value by multiplying the functionality of the NFT items as they can be used on various platforms and for various purposes, maximizing both the extrinsic (e.g., winning social influence) and intrinsic value (e.g., utility) of luxury brands. This extends the attributes of luxury products to express their digital utility in virtual spaces. As such, in the cases, most luxury NFT projects were launched in partnership with renowned blockchain or crypto projects to display the products' virtual ability in the Metaverse.

4.5. Visually driven excellence

In the real world, products are based on materials that can be touched to experience their texture or craft. However, in the virtual world, everything is dematerialized. In addition to aesthetic experience, visual appearance plays a vital role in perceiving the existence of an object and evaluating its quality, aligning with the findings by Incao and Mazzola (2021). Luxury brands with symbolic functions have always been created to be visible to the self or others (Shao et al., 2019). Moreover, for virtual luxury, visual elements are the primary attributes signaling product

excellence in the virtual context, especially when other functional aspects are not visual, laying a visible foundation for the mentioned virtual utilities.

4.6. Economic benefits of virtual assets

Investment. Luxury NFTs are easily listed on the market, and sellers can decide whether to set a fixed price or allow buyers to bid at auctions. In addition to being viewed as products, NFTs are partially regarded as investments. Consumers can anticipate the future appreciation of price fluctuations. Brands can also integrate NFTs with decentralized financial applications or innovate their financial usage in monetary terms (through smart contracts), enabling financial utilities, such as lending, stacking, or fundraising (Park et al., 2022b; Treiblmaier, 2022). Therefore, virtual luxury products have added investment potential that can be developed for consumers compared to the traditional investment value of luxury brands.

Costly but with future advantages. Consumers must make efforts to acquire a luxury NFT, such as completing tasks, bidding at the highest price, participating in activities at a set time, and being a community member. Moreover, NFTs with rare traits tend to be more expensive, which could be a brand-given price or a price determined by the market (e.g., Cho et al., 2022). Thus, luxury NFTs are expensive. However, some luxury NFTs are associated with additional economic gains in future luxury consumption coded into smart contracts, such as the right to access airdrops, rewards, or discounts. In this way, luxury NFTs reinforce the products' exclusivity, as conceptualized by Kapferer and Valette-Florence (2016), by affirming their limited accessibility and enhancing their rarity, underscored by their selective distribution methods. This approach broadens the opportunities associated with these products and amplifies their economic value, justifying their premium pricing and emphasizing their inherent worth.

5. Conclusions: A proposal for virtual luxury

Within the theoretical framework of luxury brands and their value, this study highlights the essential value of virtual luxury from the perspective of luxury NFTs. Although some studies have mentioned the term “virtual luxury” (e.g., Joy et al., 2022; Jung et al., 2021), none have conceptualized it. The NFT campaigns in this study focus on luxury NFTs and contain abundant joint practices with many other digital technologies (e.g., social media, community, AR, cryptocurrencies, and games) and various forms of virtual products (e.g., collectibles, avatars, digital twins, community gating, and wearables). These NFT cases have broad implications for luxury brands in the Metaverse. Therefore, building on these findings, the present study proposes the following conceptualization (cf. Figure 2) and definition of virtual luxury:

Virtual luxury is rooted in the Metaverse and thrives on digital scarcity. It exists within the extended reality environment surrounded by virtual components while maintaining relevance to the physical world. Virtual luxury distinguishes itself from other luxury types in the way that it provides value by inventing virtual self-expression, distinctions in virtual interactions, experiences in virtual space, facilitation for virtual interfaces, visually driven product quality, and the economic benefits of virtual assets.

Virtual luxury carries the symbolic capital of traditional luxury brands into the Metaverse, providing consumers with luxurious virtual signals. Beyond that, the value of virtual luxury distinguishes it from traditional luxury through its distinct features. In particular, virtual luxury, distinct in its digital and dematerialized nature, comprises virtual components existing predominantly within the digital realm. The crux of its appeal lies in its digital visual design, shaping product appearance and quality. Virtual luxury has dynamic and expandable functions, which is a testament to its digital nature. In contrast, traditional physical luxury embodies

tangibility and materialization, finding its place within the physical realm, where the tactile feel is pivotal for product appearance and quality. This is also true for intangible luxury experiences, such as luxury hotels, luxurious stores, and posting luxury products on social media. Even though these experiences are intangible, they all originate from physical items. Based on the physical nature, the functions of physical luxury items are often fixed and limited.

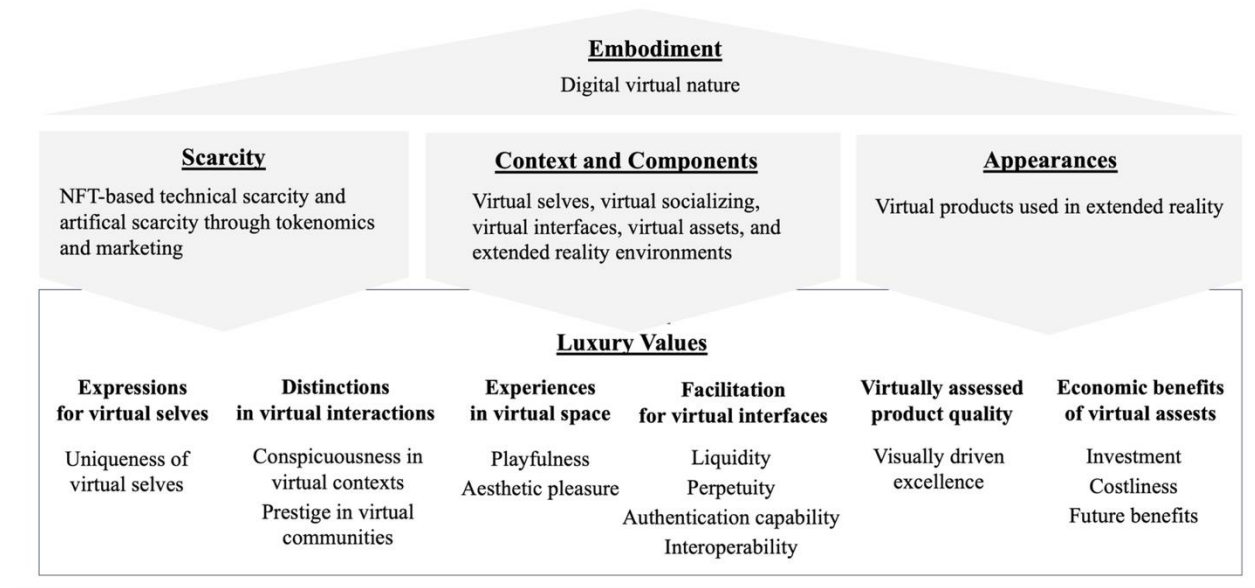


Figure 2. NFT-based virtual luxury.

6. Implications and limitations

6.1. Theoretical implications

Luxury brands have undergone many transformations throughout history. However, all these transformations are based on physical products. Given the current turning point at which reality expands from the physical to the virtual world (Dwivedi et al., 2022; Giang Barrera & Shah, 2023), discussing the concept of virtual luxury and envisioning the virtual transformation of luxury brands has significant meaning. The proposed concept of virtual luxury in this study follows previous research on virtual business, consumption, and goods (Denegri-Knott & Molesworth, 2010; Han et al., 2010; Jung & Pawlowski, 2014). To advance luxury in virtual reality, Leban et al. (2020)

discussed the virtual practices of physical products, such as digitalizing luxury brands by posting them on social media. Jung et al. (2021) introduced the role of virtual reality in creating democratization, escapism, and actualized anxiety in luxury brands' virtual fashion shows. This study further presents virtual practices for virtual products enabled by NFTs. In this respect, virtual luxury products are featured in virtual forms and used in extended reality, overturning the previous understanding of luxury products based on their physical form. Studies have highlighted their novelty and potential in virtual spaces (Alexander & Bellandi, 2022; Joy et al., 2022). By proposing the concept of virtual luxury, this study provides implications for future studies to develop theories of virtual luxury from a broader perspective and sustain and reinvent luxury brands in a virtual context.

The study findings contribute to refining the current theories of luxury value. Previous studies have extensively developed theories of luxury value based on traditional luxury products (e.g., Jung Choo et al., 2012; Malone et al., 2023; Rosendo-Rios & Shukla, 2023; Wiedmann et al., 2007). These theories have implicated the motivations underlying luxury value. However, they have limitations in providing contextual guidance within a virtual context. For instance, the price, usability, quality, uniqueness, self-identity, hedonic, conspicuousness, and prestige proposed by Wiedmann et al. (2007) two decades ago remain true for virtual luxury but are realized through distinctive virtual approaches. The findings bridge traditional luxury value theories and virtual luxury value creations, confirming the value and significance of NFT features revealed in previous studies (e.g., Alexander & Bellandi, 2022; Sung et al., 2023). Furthermore, this study identifies strategies for leveraging these NFT attributes to create luxury value, recognizing the role of many virtual elements in the value-creation process, such as virtual selves, interactions, experiences, utilities, and assets.

To sustain the development of the luxury industry, many studies (e.g., Ko et al., 2019) have endeavored to define luxury brands and propose conceptual frameworks. For instance, Wang (2022) highlighted three luxury features (i.e., sociocultural narratives, exquisite design and artistry, and sensory appeal) and three luxury competencies (i.e., luxury symbolism, luxury expertise, and aesthetic taste) to define luxury brands. Ko et al. (2019) summarized the five core features of luxury brands from the literature, namely, high quality, authenticity, prestigious image, premium price, and psychological connection with consumers. In addition, Okonkwo (2009) noted the unchanging role of luxury brands in social stratification. This study confirms the applicability of these definitions in virtual luxury by finding that these features are still fundamental for virtual luxury. However, this study determined that the uniqueness of virtual luxury relates to its virtual embodiment, components, contexts, scarcity, and appearance. Therefore, this study adopted a distinct approach to defining virtual luxury by highlighting these elements. The definition of virtual luxury in this study introduces a new form of luxury, further enriching the understanding of the fundamental features of luxury brands.

This study also contributes to the theoretical knowledge in NFT literature by presenting the value of NFTs in luxury brands across various product types and value facets. The present study answers the calls by Alexander and Bellandi (2022), Belk et al. (2022), Colicev (2022), and Joy et al. (2022) for insight into NFT marketing and luxury brands. The findings echo previous findings on NFTs, such as those regarding branding attributes (Lee et al., 2023), ownership of virtual possessions (Belk et al., 2022), and marketing incentives (Treiblmaier, 2021). Therefore, the findings have implications for future studies that explore the untapped potential of NFTs.

6.2. Managerial Implications

The Internet is experiencing the next wave of innovation with the emergence of the Metaverse (Dwivedi et al., 2022). Luxury marketers should be aware of the opportunities to sustain luxury brands by reinventing luxury products, services, and experiences. Particularly, NFTs provide a new opportunity to reconstruct scarcity digitally. The scarcity of NFTs has enabled luxury marketers to reinvent luxury value. For example, marketers can issue NFTs as a community access to distinguish between in- and out-groups, bond physical products with NFTs as a digital twin to add verifiability, and launch NFT avatars as a new method to manifest consumer social status. Additionally, luxury brands should sustain their traditional marketing advantages through virtual marketing. For instance, luxury brands should continue their brand heritage and culture through the storytelling of virtual products by employing visual and narrative designs to reinforce their established brand advantages. However, the development of Web 3.0 and the Metaverse is still in the initial stages and is underdeveloped. A promising market may reward pioneers as leaders, which may come with costs and risks. Thus, luxury marketers should also balance the opportunities and risks.

6.3. Limitations and future research

While acknowledging these insights, recognizing the inherent limitations of this research is crucial. The primary shortcomings are the constrained research method and specific time focus. Initially, the inductive method shaped the findings from a strategic perspective. Given the nascent stage of luxury NFTs, evolving trends may alter or expand these findings. Subsequent research building on these limitations should investigate consumer value perceptions using qualitative and quantitative methods and further validate these findings through follow-up observations.

The creation of a typology and classification of virtual luxury goods and consumers is a critical step to deepen the understanding of virtual luxury goods. This approach can enhance the grasp of the varied appeal of virtual luxury items across consumer segments and their integration into the larger luxury market. For instance, Han et al. (2010) used income and the need for brand prominence to classify luxury consumers, and they classified luxury brands as conspicuous and inconspicuous. Future work could determine what dimensions drive the difference between virtual luxury categories and consumer segments.

Moreover, an in-depth examination of consumer behavior in relation to virtual luxury is essential. As argued throughout this study, symbolic, expressive, experiential, and hedonic values are dominant in luxury brands. These values are embedded in consumers' subjective comprehension and beliefs. Examining luxury strategies from the consumer's perspective and exploring the moderators and mediators can ensure the effectiveness of a strategy, validating its meaningfulness.

In addition, the roles of emerging digital technologies (e.g., artificial intelligence) and marketing components (e.g., game and community) in co-creating luxury values for virtual luxury should be investigated. Prior studies (e.g., Javornik et al., 2021; Jung et al., 2021) have made efforts from this perspective and illuminated the value of novel virtual experiences for luxury brands. As digital technology continues to evolve and the Metaverse is still in its early stages, further investigations into how and why emerging technologies can be applied in virtual luxury are helpful for luxury brands to navigate these changes.

Future studies should also consider the interaction between virtual and traditional luxury markets, analyzing how the emergence of virtual luxury influences product portfolio strategies for luxury companies. This exploration may uncover whether virtual luxury complements or competes

with physical luxury goods and the determinants of these interactions, enriching the strategic meaning of virtual luxury.

Lastly, the ethical considerations associated with virtual luxury are worth investigating. Within the luxury sector, issues such as sustainability (Osburg et al., 2021), counterfeits (Jiang et al., 2018), and the impact of luxury consumption on consumers' well-being (Kumagai & Nagasawa, 2021) play a pivotal role in sustaining the development of luxury brands and revealing dynamic factors that influence consumer behavior. Investigating how these ethical concerns apply to virtual luxury not only helps elucidate what and how in virtual luxury consumption but also encourages critical reflection on its potential benefits and drawbacks for human life. Table 4 details the proposed research agenda.

Table 4

Research Agenda

Topics		Research Questions
Consumer behavior	Investigating changes in consumer behavior and understanding the corresponding psychological mechanisms	<ul style="list-style-type: none"> • What are consumers' perceptions and motivations regarding virtual luxury? • How do the needs and personalities of consumers moderate their attitudes toward and purchase intentions for virtual luxury? • What is the typology of virtual luxury consumers? What are the critical dimensions to classify their consumption behaviors? • Do the primary consumers of virtual luxury differ from those of physical luxury? • How does virtual luxury affect self-identity, status signaling, and social dynamics in digital spaces, and how do these drivers contrast with traditional luxury consumption?
Category of virtual luxury	Exploring the subcategories of virtual luxury and investigating the determining dimensions that can	<ul style="list-style-type: none"> • What are the differences or differential dimensions between various types of virtual luxury? • How can the perceived value of purely virtual products, purely physical products, and digital twins be compared?

	classify virtual luxury products	
New technology and other marketing components	Examining the value of more emerging technologies in luxury transformation and paying attention to the potential drawbacks	<ul style="list-style-type: none"> • How do emerging digital technologies (e.g., AI, VR, and AR) reestablish approaches for creating luxury values, luxury perceptions, luxury services, and luxury experiences? • How and why do the relevant virtual spaces affect pre-, mid-, and post-consumption decisions (e.g., community, game, and online trading marketplaces)? • What are the potential negatives of emerging digital technologies for luxury brands?
Marketing strategy	Positioning a suitable role for virtual luxury in a luxury company	<ul style="list-style-type: none"> • What is the strategic position of virtual luxury in the product portfolio of luxury companies? • How can an effective marketing strategy be developed for virtual luxury? • What are the differences in developing marketing strategies for physical versus virtual luxury? • What are the relationships between virtual and physical luxury? • How will virtual luxury alter the position, product life cycle, and primary competence of luxury companies? • How should sustainability problems related to virtual luxury be approached? • How can branding dimensions and the marketing mix be established for luxury brands in the Metaverse?
Marketing ethics	Investigating ethical issues related to virtual luxury consumption	<ul style="list-style-type: none"> • What are the specific ethics tied to virtual luxury? • What is the impact of virtual luxury consumption on consumers' well-being? • How and why does virtual luxury facilitate or prevent the sale and purchase of counterfeits? What is the role of blockchain in this respect?

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